WHAT IS CLAIMED IS:

1. A method of forming a self-aligned patterned layer on a substrate having thereon a pre-patterned film, comprising the steps of:

applying onto said substrate having thereon a pre-patterned film a solution of a masking material in a carrier;

removing at least a portion of said carrier to form a coating;

patternwise exposing said coating to radiation in conjunction with a blocking mask so that said radiation is transmitted through said coating and is reflected back to said coating to produce a patterned layer having exposed and unexposed regions with a given spatial intensity distribution; and

developing said exposed and unexposed regions to reveal a mask pattern on said coating commensurate with said spatial intensity distribution generated during exposure to radiation to produce said self-aligned patterned layer on said pre-patterned film.

2. The method of claim 1, wherein said pre-patterned film on said substrate comprises a first set of regions of said substrate in said film having a first atomic composition and a second set of regions of said substrate having a second atomic composition that is different from said first composition.

3. The method of claim 2, wherein said first set of regions includes one or more metallic or conductive elements and wherein said second set of regions includes one or more dielectric materials.

4. The method of claim 1, wherein said coating is selected from the group consisting of: a chemically amplified and a chemically non-amplified photoresist.

5. The method of claim 1, wherein said coating is selected from the group consisting of: a positive tone photoresist, a negative tone photoresist, a positive tone thermal resist, and a negative tone thermal resist.

6. The method of claim 5, wherein said developed patterned resist is further exposed to a dry etch to remove any remaining resist thereby preventing imperfect self-aligned patterning.

7. The method of claim 1, wherein said mask pattern is used as a lift-off mask.

8. The method of claim 1, wherein said mask pattern is used as an etch mask.

9. The method of claim1, wherein said mask pattern is used as sacrificial polish stop layer.

10. The method of claim 1, wherein said patterned substrate has two or more adjacent regions of different reflectivity.

11. The method of claim 1, wherein said exposure wavelength is less than 2 microns.

12. The method of claim 1, wherein two distinct wavelengths to which said coating is sensitive are used to generate the difference in delivered dose so that each wavelength is designed to isolate differences in reflectivity.

13. The method of claim 1, wherein said radiation is selected from the group consisting of: an actinic radiation, an electron beam, an ion beam and a combination thereof.

14. The method of claim 1, wherein said actinic radiation is selected from the group consisting of: ultraviolet (UV) radiation, visible radiation and infrared (IR) radiation.

15. The method of claim 1, wherein said pre-patterned film has a nanocolumnar structure.

16. The method of claim 1, wherein said pre-patterned film is a combination of a nanocolumnar and non-nanocolumnar structured film.

17. A structure comprising:

a substrate having thereon a pre-patterned film onto which a self aligned patterned layer is formed, wherein said patterned layer on said pre-patterned film is defined by a spatial reflectivity map of said substrate; wherein said patterned layer disposed on said pre-patterned film is prepared from a coating comprising a masking material having exposed and unexposed regions with a given spatial intensity distribution, wherein said exposed regions have been developed to reveal a mask pattern on said coating commensurate with said spatial intensity distribution generated during exposure to radiation to form said exposed and unexposed regions; and wherein a blocking mask pattern is optionally used to block formation of said self-aligned pattern in said patterned layer in certain regions.

18. The structure of claim 17, wherein said pre-patterned film has a nanocolumnar structure.

19. The structure of claim 17, wherein said pre-patterned film is a combination of a nanocolumnar and non-nanocolumnar structured film.

20. The structure of claim 17, wherein said mask pattern comprises a first set of regions of said substrate having a first atomic composition and a second set of regions of said substrate having a second atomic composition that is different from said first composition.

21. The structure of claim 20, wherein said first set of regions includes one or more metal elements and wherein said second set of regions includes one or more dielectrics.

22. The structure of claim 21, wherein said self-aligned patterned layer is disposed on said first and on said second set of regions.

23. The structure of claim 21, wherein said self-aligned patterned layer is disposed solely on said first set of regions.

24. The structure of claim 21, wherein said self-aligned patterned layer is disposed solely on said second set of regions.

25. The structure of claim 21, wherein said self-aligned patterned layer is disposed on regions outside said first set and said second set of regions.

26. The structure according to claim 17, wherein said substrate comprises at least one conductive feature formed thereon.

27. The structure according to claim 26, wherein said substrate further comprises at least one insulating layer surrounding said at least one conductive feature.

28. The structure according to claim 27, wherein said at least one insulating layer surrounds said at least one conductive feature at its bottom and lateral surfaces.

29. The structure according to claim 27, further comprising at least one conductive barrier layer disposed on at least one interface between said at least one insulating layer and said at least one conductive feature.

30. The structure according to claim 27, wherein said at least one conductive feature and said at least one insulating layer together are repeated to form a multilevel interconnect stack.

31. The structure according to claim 17, wherein said substrate is one of a microelectronic device chip, a ceramic chip carrier and an organic chip carrier.

32. A microelectronic device having a structure comprising:

a substrate having thereon a pre-patterned film having thereon a self aligned patterned layer, wherein said pattern on said pre-patterned film is defined by a spatial reflectivity map of said substrate;

a patterned layer disposed on said pre-patterned film prepared from a coating comprising a masking material having exposed and unexposed regions with a given spatial intensity distribution, wherein said exposed regions have been developed to reveal a mask pattern on said coating commensurate with said spatial intensity distribution generated during exposure to radiation to form said exposed and unexposed regions; and optionally

a blocking mask disposed on said patterned layer.

33. A structure prepared by a method comprising the steps of:

applying onto a substrate having thereon a pre-patterned film a solution of a masking material in a carrier;

removing at least a portion of said carrier to form a coating;

patternwise exposing said coating to radiation in conjunction with a blocking mask so that said radiation is transmitted through said coating and is reflected back to said coating to produce a patterned layer having exposed and unexposed regions with a given spatial intensity distribution; and

developing said exposed and unexposed regions to reveal a mask pattern on said coating commensurate with said spatial intensity distribution generated during exposure to radiation and said blocking mask to produce said self-aligned patterned layer on said pre-patterned film.

34. A microelectronic device having a structure prepared by a method comprising the steps of:

applying onto a substrate of said microelectronic device having thereon a pre-patterned film a solution of a masking material in a carrier;

removing at least a portion of said carrier to form a coating;

patternwise exposing said coating to radiation in conjunction with a blocking mask so that said radiation is transmitted through said coating and is reflected back to said coating to produce a patterned layer having exposed and unexposed regions with a given spatial intensity distribution; and

developing said exposed and unexposed regions to reveal a mask pattern on said coating commensurate with said spatial intensity distribution generated during exposure to radiation;

wherein said pre-patterned film is a self aligned patterned layer.